

GS 0446 A US

AMENDMENTS TO THE CLAIMS

The listing below of the claims will replace all prior versions and listings of claims in the present application:

Listing of Claims:

Claim 1 (currently amended): A contact pressure system for a continuously variable transmission, said system comprising: at least one torque sensor having an input side that is loaded with a torque from a power source and having an output side that provides a contact pressure force that acts on an axially-movable disk and that depends on the torque applied on the input side, wherein the contact pressure system includes at least one transmission transfer unit positioned between the power source and the torque sensor and that transmits transfers torque between the power source and the torque sensor , including a first component of the torque sensor that is connected into the flow of power when a torque is applied to the torque sensor in a first direction, and including a second component of the torque sensor that is switched into the flow of force when a torque acts on the torque sensor in a second direction opposite to the first direction.

Claim 83 (previously presented): A contact pressure system in accordance with claim 1, wherein at least one set of rotatable disks is operatively coupled with the contact pressure system, and wherein a torque that is applied to the input side of the torque sensor system differs from a torque that is transmitted

GS 0446 A US

between the at least one set of disks and a second set of rotatable disks that is operatively coupled with the at least one set of disks.

Claim 84 (previously presented): A contact pressure system in accordance with claim 1, wherein the contact pressure system includes elements having ramps that extend at an angle that is oriented circumferentially relative to an axis of rotation of the torque sensor, wherein for different directions of rotation of the torque sensor different ramps are provided, and wherein a freewheel is provided for each of the different directions of rotation.

Claim 85 (previously presented): A contact pressure system in accordance with claim 84, wherein the freewheel is a double freewheel system that cooperates with the torque sensor.

Claim 86 (previously presented): A contact pressure system in accordance with claim 85, including a switchover device that switches the freewheel between predetermined rotation-direction-dependent control characteristics when the direction of rotation of the torque is changed.

Claim 87 (previously presented): A contact pressure system in accordance with claim 84, including means for providing that at least one ramp of the torque sensor is operative upon at least one adjoining power transmission component, and that ensures that, as a function of the direction of loading, a

GS 0446 A US

particular ramp intended for that direction of loading is arranged in the flow of power.

Claim 88 (currently amended): A contact pressure system in accordance with claim 84, wherein the torque sensor has different ramps including a first ramp by which a torque is to be transmitted when the torque sensor is loaded in a first direction, and at least a second ramp by which a torque is to be transmitted when the torque sensor system is loaded in a second direction opposite to the first direction, and wherein a freewheel unit is provided with at least one first freewheel associated with the first direction of rotation, as well as with at least one second freewheel associated with the second direction of rotation, and means for preventing jamming of the freewheels when the direction of rotation of the torque sensor changes.

Claim 89 (previously presented): A contact pressure system in accordance with claim 1, including at least one spring system associated with the torque sensor and through which torque is transmitted.

Claim 90 (currently amended): A contact pressure system in accordance with claim 1, wherein the transmission ratio of the ~~transmission~~ transfer unit is adjustable.

Claim 91 (currently amended): A contact pressure system in accordance

GS 0446 A US

with claim 1, wherein the ~~transmission~~ transfer unit is a planetary transmission including a sun gear, a ring gear, and planet gears that engage the sun gear and the ~~planet gears~~ ring gear and that are supported in a planetary gear carrier.

Claim 92 (previously presented): A contact pressure system in accordance with claim 91, wherein the sun gear of the planetary transmission is non-rotatably coupled with a shaft that is coupled to an internal combustion engine.

Claim 93 (previously presented): A contact pressure system in accordance with claim 91, wherein the carrier of the planetary transmission is non-rotatably coupled with an input member of the torque sensor.

Claim 94 (previously presented): A contact pressure system in accordance with claim 91, wherein a differential torque between an input torque applied to the sun gear of the planetary transmission and a carrier torque applied to the input side of the torque sensor is returned as a reactive torque between the output side of the torque sensor and the ring gear of the planetary transmission.

Claim 95 (previously presented): A contact pressure system in accordance with claim 91, wherein the planetary transmission has noncircular gears.

GS 0446 A US

Claim 96 (currently amended): A contact pressure system in accordance with claim 83, wherein torque that is transmitted from the ~~transmission~~ transfer unit in the direction of the set of disks of the continuously variable transmission depends on the transmission ratio between the sets of disks of the continuously variable transmission.

Claim 97 (currently amended): A contact pressure system in accordance with claim 1, wherein at least one gear of the ~~transmission~~ transfer unit has the shape of an ellipse.

Claim 98 (previously presented): A contact pressure system in accordance with claim 91, wherein the sun gear and the planet gears are elliptical.

Claim 99 (previously presented): A contact pressure system in accordance with claim 91, wherein torque transmitted from the planetary transmission to the continuously variable transmission is transmitted from the carrier of the planetary transmission.

Claim 100 (previously presented): A contact pressure system in accordance with claim 1, wherein the torque sensor includes a system of linear ramps that extend in a circumferential direction of the torque sensor.

GS 0446 A US

Claim 101 (previously presented): A contact pressure system in accordance with claim 1, wherein the torque sensor includes a ramp system of nonlinear ramps that extend in a circumferential direction of the torque sensor.

Claim 102 (previously presented): A contact pressure system in accordance with claim 1, wherein the torque sensor has different ramps, and means for controlling by which of the ramps a torque is transmitted.

Claim 103 (previously presented): A contact pressure system in accordance with claim 1, wherein the torque sensor includes ramps; wherein at least one ramp is provided for each direction of rotation, and wherein those ramps associated with the various directions of rotation are uncoupled.

Claim 104 (previously presented): A contact pressure system in accordance with claim 1, wherein the torque sensor has ramps against at least one of which at least one torque-transmitting component of the torque sensor is supported.

Claim 105 (canceled)

Claim 106 (currently amended): A contact pressure system in accordance with claim 105 1, wherein the first component includes at least one first ramp.

GS 0446 A US

Claim 107 (previously presented): A contact pressure system in accordance with claim 106, wherein the second component includes at least a second ramp.

Claim 108 (previously presented): A contact pressure system in accordance with claim 107, wherein the first ramp is rotatable relative to the second ramp.

Claim 109 (previously presented): A contact pressure system in accordance with claim 107, wherein the at least one first ramp is coupled with the at least one second ramp by at least one spring element.

Claim 110 (previously presented): A contact pressure system in accordance with claim 107, wherein at least one of the first ramp and the second ramp extends in a circumferential direction of the torque sensor.

Claim 111 (previously presented): A contact pressure system in accordance with claim 107, wherein at least one of the first ramp and the second ramp extends in a circumferential direction and in a radial direction of the torque sensor.

Claim 112 (previously presented): A contact pressure system in

GS 0446 A US

accordance with claim 107, including a damper unit provided between the at least one first ramp and the at least one second ramp.

Claim 113 (currently amended): A contact pressure system in accordance with claim ~~405~~ 1, wherein the first component includes a first freewheel and the second component includes a second freewheel, and wherein the first and second freewheels are coupled with each other.

Claim 114 (previously presented): A contact pressure system in accordance with claim 113, wherein during a switchover between the first freewheel and the second freewheel there exists a region within which both freewheels are in an opened, non-torque-transmitting condition.

Claim 115 (previously presented): A contact pressure system in accordance with claim 113, wherein the first and the second freewheels each include at least one transmitting body, and a common retainer is provided for the transmitting bodies of the first and the second freewheel.

Claim 116 (currently amended): A contact pressure system in accordance with claim ~~443~~ 115, wherein the transmitting body is a rolling element.

Claim 117 (currently amended): A contact pressure system in accordance with claim 115, wherein the transmitting bodies in each case operate along a

GS 0446 A US

respective profiled track, and wherein at least one of the profiled tracks is arranged radially outward of the transmitting bodies that operate on that track.

Claim 118 (currently amended): A contact pressure system in accordance with claim 115, wherein the transmitting bodies in each case operate along a respective profiled track, and wherein at least one of the profiled tracks is arranged radially inward of the transmitting bodies that operate on that track.

Claim 119 (previously presented): A contact pressure system in accordance with claim 113, wherein the first and the second freewheel have at least one transmitting body and that at least one transmitting body is associated with both the first and the second freewheel.

Claim 120 (previously presented): A contact pressure system in accordance with claim 113, wherein the first and the second freewheels each have at least one transmitting body and respective unprofiled tracks, wherein the unprofiled tracks are non-rotatably connected with each other.

Claim 121 (previously presented): A contact pressure system in accordance with claim 115, including a retaining device that holds predetermined transmitting bodies at a spacing with respect to a first running track and in contact with a second running track, and wherein the running tracks and the transmitting bodies are associated with the same freewheel.

GS 0446 A US

Claim 122 (previously presented): A contact pressure system in accordance with claim 115, including a catch device between at least one transmitting body and at least one track, so that upon movement of that track a circumferential force acts on the transmitting body of the freewheel when the freewheel is in an opened position.

Claim 123 (previously presented): A contact pressure system in accordance with claim 122, wherein the catch device is a friction device.

Claim 124 (previously presented): A contact pressure system in accordance with claim 115, wherein during torque transmission by the freewheels the transmitting bodies are clamped between two tracks, and wherein the transmitting bodies are arranged in a radial direction between the tracks.

Claim 125 (previously presented): A contact pressure system in accordance with claim 115, wherein the transmitting bodies associated with different freewheels are spaced from each other in an axial direction.

Claim 126 (previously presented): A contact pressure system in accordance with claim 115, wherein the transmitting bodies associated with a respective freewheel are arranged in series.

GS 0446 A US

Claim 127 (previously presented): A contact pressure system in accordance with claim 120, wherein at least one track of a freewheel is operatively coupled with a component of the torque sensor.

Claim 128 (previously presented): A contact pressure system in accordance with claim 120, wherein at least one track of a freewheel is operatively coupled with a component of a set of disks.

Claim 129 (previously presented): A contact pressure system in accordance with claim 117, wherein tracks associated with different freewheels are movable relative to each other.

Claim 130 (currently amended): A contact pressure system in accordance with claim 117, wherein tracks associated with different freewheels are movable relative to each other, and wherein a the track associated with a the first freewheel is arranged in a fixed manner with respect to a the track that is associated with a the second freewheel.

Claim 131 (previously presented): A contact pressure system in accordance with claim 117, wherein at least a first transmitting body is associated with at least one first running track whereby a torque is transmitted by that first transmitting body and that first running track when the torque sensor is loaded in a first direction of rotation;

GS 0446 A US

at least a second transmitting body is associated with at least a second running track, whereby a torque is transmitted by that second transmitting body and that second running track when the torque sensor is loaded in a second direction of rotation;

wherein the first transmitting body is arranged at a predetermined phase angle relative to the second transmitting body;

wherein the first running track is arranged at a predetermined phase angle with relation to the second running track; and

wherein the phase angle between the transmitting bodies is smaller than the phase angle between the running tracks.

Claim 132 (previously presented): A contact pressure system in accordance with claim 84 including a spring system for ensuring that appropriate ramps are in engagement with a power transmitting component of the torque sensor to correspond with a direction of power flow through the torque sensor.

Claim 133 (previously presented): A contact pressure system in accordance with claim 102, including a spring system for controlling which ramp is to be switched into the flow of power.

Claim 134 (previously presented): A contact pressure system in accordance with claim 133, wherein at least one ramp of the torque sensor is coupled with at least one spring of the spring system.

GS 0446 A US

Claim 135 (currently amended): A contact pressure system in accordance with claim 133, wherein at least one ramp of the torque sensor is coupled by at least one spring of the spring system with a component coupled with ~~an internal combustion engine~~ the power source.

Claim 136 (currently amended): A contact pressure system in accordance with claim 133, wherein at least one spring of the spring system transmits torque between a ramp of the torque sensor and a component coupled with ~~an internal combustion engine~~ the power source, whereby the at least one spring is arranged on the input side of the torque sensor.

Claim 137 (currently amended): A contact pressure system in accordance with claim 133, wherein at least one first spring of the spring system transmits torque between a first ramp of the torque sensor and a component coupled with ~~an internal combustion engine~~ the power source, and wherein at least a second spring of the spring system transmits torque between a second ramp of the torque sensor and a component coupled with ~~an internal combustion engine~~ the power source, whereby the first and second springs are arranged on the input side of the torque sensor.

Claim 138 (previously presented): A contact pressure system in accordance with claim 136, wherein the at least one spring is subject to

GS 0446 A US

increasing tension with increasing running radius of an endless torque-transmitting means that engages a set of disks that is associated with the at least one spring.

Claim 139 (previously presented): A contact pressure system in accordance with claim 136, wherein the at least one spring is under tension at a maximum running radius of an endless torque-transmitting means that engages the set of disks associated with the at least one spring.

Claim 140 (currently amended): A contact pressure system in accordance with claim 1, wherein the contact pressure system is operative to control a contact pressure in a the continuously variable transmission that includes a set of disks on an input side, as well as a set of disks on an output side of the continuously variable transmission.

Claim 141 (previously presented): A contact pressure system in accordance with claim 140, wherein the torque sensor is arranged on the input side disk set.

Claim 142 (previously presented): A contact pressure system in accordance with claim 140, wherein the torque sensor is arranged on the output side disk set.

GS 0446 A US

Claim 143 (previously presented): A contact pressure system in accordance with claim 132, wherein the spring system is arranged on the input side of the torque sensor.

Claim 144 (previously presented): A contact pressure system in accordance with claim 132, wherein the spring system is arranged on the output side of the torque sensor.

Claim 145 (currently amended): A contact pressure system in accordance with claim 132, wherein when a torque is applied to the torque sensor during a rotation direction change, a spring force ~~act~~ acts against the ramp.

Claim 146 (previously presented): A contact pressure system in accordance with claim 132, wherein the spring system is a vibration damper.

Claim 147 (previously presented): A contact pressure system in accordance with claim 1, wherein the contact pressure force acts against at least one disk of a set of disks, whereby that set of disks has two disks that are arranged so that they are movable relative to each other.

Claim 148 (previously presented): A contact pressure system in accordance with claim 147, wherein the contact pressure system acts against different disks.

GS 0446 A US

Claim 149 (previously presented): A contact pressure system in accordance with claim 1, wherein the contact pressure force is produced as a function of a running radius of an endless torque-transmitting means carried by a set of disks.

Claim 150 (previously presented): A contact pressure system in accordance with claim 1, wherein the torque sensor has at least one ramp as well at least one power transmitting body, wherein the power transmitting body and the ramp are movable relative to each other, wherein a relative position between the power transmitting body and the ramp is a function of the input side torque, and wherein different relative positions between the power transmitting body and the ramp result in different contact pressure forces.

Claim 151 (currently amended): A contact pressure system in accordance with claim 1, wherein the torque sensor has at least one ramp having different positions therealong that are associated with different running radii of an endless torque-transmitting means carried on a set of rotatable disks of a the continuously variable transmission that are associated with that at least one ramp, and wherein the at least one ramp has a gradient that increases with increasing running radius of the endless torque-transmitting means.

Claim 152 (previously presented): A contact pressure system in

GS 0446 A US

accordance with claim 151, wherein the contact pressure force is a function of the gradient of the ramp.

Claim 153 (currently amended): A contact pressure system in accordance with claim 1, wherein the torque sensor includes different components that are rotated relative to each other as a result of loading of the torque sensor with an applied torque, and wherein the contact pressure force produced by the torque sensor is a function of the relative ~~angel~~ angle of rotation of those components.